

REMARKS

This paper accompanies a request for continued prosecution (RCE) and is presented in response to the final official action dated October 26, 2010, wherein (a) claims 1-3, 7, and 10-12 were pending, (b) claims 1-3, 7, 10, and 11 were rejected as being obvious over Patel in view of Kirckof, and (c) claim 12 was rejected as being obvious over Patel in view of Kirckof and Schmidt.

By the foregoing, claims 1-3, 7, 10, and 12 have been amended, and new claim 13 has been added. As a result, claims 1-3, 7, and 10-13 are pending and at issue.

Claims 1-3, 7, 10, and 12 have been amended to define a hydrogen peroxide plasma-sterilization method instead of a plasma-sterilization indicator.

Support for this amendment can be found in the second line of the paragraph under the heading FIELD OF THE INVENTION on page 1, the first full paragraph on page 5, the first full paragraph on page 6, and the third and fourth full paragraphs on page 9 of the present specification.

Claim 10 has been amended to depend from amended claim 1, and new claim 13 more specifically defines the adsorption indicator and the metal chelate-titration indicator.

Support for new claim 13 can be found in lines 20 to 22 on page 5, and lines 3 to 7 on page 6 of the present specification.

The obviousness rejections of the claims are respectfully traversed. Reconsideration of the application, as amended, is solicited.

The examiner rejects claims 1-3, 7, 10 and 11 as being obvious over Patel (WO 00/61200) in view of Kirckof (US 6,488,890), and rejects claim 12 as being obvious over Patel in view of Kirckof and Schmidt (US 2002/0155224).

In the invention, discoloring occurs according to an entirely different mechanism from that of Patel. In the invention, a product formed in a reaction between one or more compounds (A), the organic metal compound (B) discolors into a different color in a particular pH range owing to a pH change caused by hydrogen peroxide and an oxidative force in plasma treatment, and a metal ion which is a cation participates in the reaction.

In the official action, the examiner recognizes that in Patel, the reactive species are bromine anions, whereas in the invention, the reactive species is a cation (metal ion). However, the amended claims do not recite a particular ion as a reactive species; therefore, independent claim 1 has been to define a hydrogen peroxide plasma-sterilization method, and to distinguish the reaction mechanism of the invention from that of Patel.

In particular, Patel does not disclose:

"a hydrogen peroxide plasma-sterilization method comprising:

using a plasma-sterilization indicator comprising: one or more compounds (A) selected from the group consisting of adsorption indicators and metal chelate-titration indicators; an organic metal compound (B); and a polyvalent alcohol (C);

forming a product via a cation in a reaction between the one or more compounds (A) and the organic metal compound (B); and

discoloring the product by hydrogen peroxide plasma-sterilization,

wherein the polyvalent alcohol (C) increases a discoloration speed of the discoloring of the product."

Further, in Patel, reactive species, which are anions such as a bromine anion, a chlorine anion, or the like, are generated from an activator by exposing the activator to oxidative plasma. The generated reactive species attach to the substrate dye, and thereby a color changeable indicator is produced, and discoloration based on the color changeable indicator occurs effected with a pH, as shown in the last line on page 6 to line 6 on page 7 of Patel.

Furthermore, aluminum acetylacetone is used as a source for generating acetylacetone anions in Patel. In contrast, in the invention, aluminum acetylacetone is used as a source for generating aluminum cations.

The color change mechanism of Patel is also entirely different from that of the invention. Therefore, even if the same dye and aluminum chelate as the invention were to be used in Patel, a compound thereof after a color change would be entirely different from that of the invention.

Kirckof (US 6,488,890) describes a sterilization indicator system that allows a sterilization cycle to be monitored without the need for a user to subjectively distinguish between color, quality, or intensity of display patterns. However, the

indicator does not fall within the scope of the invention, and an organic metal compound (B) defined in the specification and the reaction mechanism discussed above are not taught therein. Further, the concept of enhancing discoloration speed by a glycol solvent in the plasma-sterilization indicator composition is also not taught in Kirckof

Schmidt (US 2002/0155224 A1) describes a thermal ink jet ink composition for textile media, which comprises a water miscible organic solvent, water, and a dye. However, a plasma-sterilization indicator itself or a plasma-sterilization indicator comprising one or more compounds (A) selected from the group consisting of adsorption indicators and metal chelate-titration indicators; an organic metal compound (B); and a polyvalent alcohol (C), in addition to the reaction mechanism or the concept of enhancing discoloration speed by a glycol solvent discussed above are not taught or suggested in Schmidt.

Thus, Kirckof and Schmidt neither teach nor suggest the subject matter of the invention, especially the technical features discussed above, and do not compensate for the gap between the technical features of the present invention and that of Patel.

In consideration of the above, even if the teachings of Patel were considered in view of Kirckof, or in view of Kirckof and Schmidt, a person skilled in the art could not have accomplished the subject matter of the invention. Accordingly, the invention is not obvious over the disclosure of Patel in view of Kirckof, or in view of Kirckof and Schmidt.

Should the examiner wish to discuss the foregoing or any matter of form in an effort to advance this application toward allowance, she is urged to telephone the undersigned at the indicated number.

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Respectfully submitted,

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